

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket: SA'AR1

In re Application of: ) Conf. No.: 9434  
Amir SA'AR et al. )  
 ) Art Unit:  
 )  
Appln. No.: 10/554,113 ) Examiner:  
 )  
Filed: April 20, 2004 ) Washington, D.C.  
 )  
For: VOLTAGE TUNABLE ) August 21, 2006  
INTEGRATED INFRARED IMAGER )  
 )

**INFORMATION DISCLOSURE STATEMENT [IDS]**

Honorable Commissioner for Patents  
U.S. Patent and Trademark Office  
Randolph Building, Mail Stop Amendments  
401 Dulany Street  
Alexandria, VA 22314

Sir:

This Information Disclosure Statement is submitted in accordance with 37 CFR §§1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

1. This IDS should be considered, in accordance with 37 CFR §1.97, as it is filed:

A. within three months of the filing date of the above-identified national application or within three months of the entry into the national stage of the above-identified international application.

B. before the mailing date of a first office action on the merits or before the mailing of a first Office action after the filing of a Request for Continued Examination under 37 CFR §1.114; or

[ ] C. after (A) and (B) above, but before final rejection or allowance, and Applicant has made the necessary certification (box "i" below) or paid the necessary fee (box "ii" below):

[ ] i. Counsel certifies that, upon information and belief, each item of information listed herein either was

[ ] (a) first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

[ ] (b) not cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of undersigned after making reasonable inquiry, not known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this IDS.

[ ] ii. Credit Card Payment Form, PTO-2038, is attached authorizing payment of the fee set forth in 37 CFR §1.17(p), presently believed to be \$180. If the enclosed payment is incorrect, please charge any additional fees or credit any overpayment to Deposit Account No. 02-4035 of the undersigned.

[ ] D. after (A), (B) and (C) above, but before payment of the issue fee: Applicant states as follows under 37 CFR §1.97(e) for consideration of this IDS, that, upon information and belief, each item of information listed herein either was

[ ] (a) first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

[ ] (b) not cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, not known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this IDS.

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[X] 2. In accordance with 37 CFR §1.98, this IDS includes a list (e.g., form BN/SB/08A/B) of all patents, publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto. Other than U.S. patent(s) and/or published U.S. application(s), which 37 CFR §1.98(a)(2)(ii) does not require to be filed unless specifically required by the Office, a copy of each document listed is attached, except as explained below:

[ ] A. Document(s) \_\_\_\_\_ is/are deemed substantially cumulative to document(s) \_\_\_\_\_, and, in accordance with 37 CFR §1.98(c), a copy of each of the former document(s) is not enclosed.

[ ] B. Certain documents were previously cited by or submitted to the Office in the following prior application(s), which are relied upon under 35 U.S.C. 120:

*(insert serial numbers and filing dates of prior applications)*

Applicant identifies these documents by attaching hereto copies of the forms PTO-892, PTO-1449, PTO/SB/08a and/or PTO/SB/08b (or their BN form equivalents) from the files of the prior application(s) or a fresh BN/SB/08A and/or BN/SB/08B listing these documents, and request that they be considered and made of record in accordance with 37 CFR §1.98(d). Per 37 CFR

§1.98(d), copies of these documents need not be filed in this application.

3. Document AI is not in the English language. In accordance with 37 CFR §1.98(a)(3), Applicant states:

An English translation of each document AI (or of the pertinent portions thereof), or a copy of an English-language abstract (or claim) is enclosed.

For documents \_\_\_\_\_, a corresponding English-language patent or published application is included on the accompanying Form BN/SB/08A, with a line drawn in the margin connecting the non-English-language document with its corresponding English-language document.

A concise explanation of the relevance of documents AI is found in the attached international search report (see reply to Comment 68 in the preamble to the final rules; 1135 OG 13 at 20).

A concise explanation of the relevance of document(s) \_\_\_\_\_ is set forth as follows:

A concise explanation of the relevance of document(s) \_\_\_\_\_ can be found on page(s) \_\_\_\_\_ of the specification.

A concise explanation of the relevance of document(s) \_\_\_\_\_ can be found on the attached sheet.

4. No explanation of relevance is necessary for documents in the English language (see reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

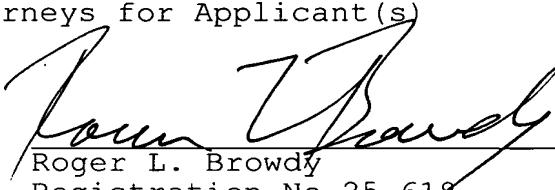
5. Other information being provided for the examiner's consideration follows:

6. In accordance with 37 CFR §§1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in 37 CFR §1.56(b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant reserves the right to prove that the date of publication is in fact different.

Respectfully submitted,

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Substitute for form 1449A/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/554,113
				Filing Date	April 20, 2004
				First Named Inventor	Amir SA"AR
				Group Art Unit	
				Examiner Name	
(use as many sheets as necessary)				Attorney Docket Number	SA'AR1
Sheet	1	of	3		

Examiner Signature		Date Considered	
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\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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Sheet	2	of	3	Attorney Docket Number	SA'AR1

NON PATENT LITERATURE DOCUMENTS / OTHER INFORMATION						
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published				T <sup>2</sup>
	AJ	LUI, H et al., "Near and middle infrared dual band operation of InGaAs/InP quantum well infrared Photodetector"; Applied Physics Letters AIP USA; Vol. 77, No. 16, October 16, 2000				
	AK	GUNAPALA, S.D. et al., "Lattice-matched InGaAsP/InP long-wavelength quantum well infrared photodetectors"; Appl. Phys. Lett, Vol. 60, No. 5, pp.636-638				
	AL	FORREST, S.R., "Performance of In <sub>x</sub> Ga <sub>1-x</sub> As <sub>y</sub> P <sub>1-y</sub> Photodiodes with Dark Current Limited by Diffusion, Recombination, and Tunneling"; IEEE J. Quantum Electron, Vol. 17, No. 2, pp. 217-226, February 1981				
	AM	LEHENY, R.F. et al., "Characterization of In <sub>0.53</sub> Ga <sub>0.47</sub> As Photodiodes Exhibiting Low Dark Current and Low Junction Capacitance"; IEEE Journal of Quantum Electronics, Vol. 17, No. 2, pp. 227-231, February 1981				
	AN	LEE, T.P. et al., "InGaAs/InP p-I-n Photodiodes for Lightwave Communications at the 0.95-1.65 μm Wavelength"; IEEE Journal of Quantum Electronics, Vol. 17, No. 2, pp. 232-238, February 1981				
	AO	SUSA, N. et al., "Characteristics in InGaAs/InP Avalanche Photodiodes with Separated Absorption and Multiplication Regions"; IEEE Journal of Quantum Electronics, Vol. 17, No. 2, pp. 243-249, February 1981				
	AP	CAMPBELL, J.C. et al. "InP/InGaAs Heterojunction Phototransistors"; IEEE Journal of Quantum Electronics, Vol. 17, No. 2, pp264-269, February 1981				
	AQ	COHEN, N. et al; "A monolithic LWIR/NIR multispectral QWIP for night vision and see spot"; Infrared Physics and Technology; XP-002299329, Vol. 42, No. 3-5, pp.391-396, September 2001				
	AR	SCHNEIDER, H et al., "Voltage-tunable two-color detection by interband and intersubband transitions in a p-i-n-i-n structure"; Applied Physics Letters, Vol. 68, No. 13, pp.1832-1834, March 25, 1996				
	AS	RYZHII, V et al., "Device Model of Integrated QWIP-HBT-LED Pixel for Infrared Focal Plane Arrays"; Proceedings of the 32 <sup>nd</sup> European Solid-State Device Research Conference University; pp. 643-646, September 2002				
	AT	RYZHII, V et al., "Analysis of dual-band quantum well photodetectors"; Journal of Applied Physics; Vol. 91, No. 9, pp. 5887-5891, May 1, 2002				
	AU	LIU, H.C. et al., "GaAs/AlGaAs quantum-well photodetector for visible and middle infrared dual-band detection"; Applied Physics Letters; Vol. 77, No. 16, pp. 2437-2439, October 16, 2000				

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